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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,976	04/08/2004	James W. Templeton	5900-00101	9048

7590 02/21/2007  
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EXAMINER
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SUGENT, JAMES F

ART UNIT	PAPER NUMBER
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2116

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/820,976	<b>Applicant(s)</b> TEMPLETON, JAMES W.	
	<b>Examiner</b> James F. Sugent	<b>Art Unit</b> 2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This Office Action is sent in response to Applicant's Communication received December 15, 2006 for application number 10/820,976 originally filed April 8, 2004. The Office hereby  
5 acknowledges receipt of the following and placed of record in file: amended claims 1-39 are presented for examination.

#### *Double Patenting*

The Examiner acknowledges the Applicant's decision to postpone the resolution of the outstanding provisional rejection on the ground of nonstatutory obviousness-type double  
10 patenting in the Office Action submitted September 20, 2006.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

20 Claims 1-3, 12-20, 23, 24, 27, 30, 31 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The above claims use the phrase "operable to" which constitutes a use limitation and thus renders the claims indefinite as to what structure is embraced by the metes and bounds of the claim language. See MPEP § 2111.04.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapius et al. (U.S. Patent No. 7,049,798 B2) (hereinafter referred to as Chapius1) (cited by Applicant) in view of Chapius et al. (U.S. Patent No. 7,000,125 B2) (hereinafter referred to as Chapius2) (cited by Applicant).

As to claim 1, Chapius1 discloses a power delivery management system (20), the system comprising: a plurality of digital power management devices (220, 230, 240 and 250), wherein each of the plurality of power management devices comprises a plurality of functions (configuration data from 210), wherein each of the plurality of power management devices is operable to provide power to one or more point of load devices (Though the point of load devices are not explicitly shown, Chapius1 does disclose providing a load to a circuit; column 1, lines 14-37) (column 4, lines 17-30 and column 4, lines 51-67); and a control and

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communication bus (200), wherein each one of the plurality of digital power management devices is coupled to the control and communication bus (as shown in fig. 2); wherein each respective one of the plurality of digital power management devices includes a controller (310) operable to control the functions of the respective digital power management device (column 5, lines 13-63); and wherein the plurality of digital power management devices exchange information over the control and communication bus (via controller 210) to exchange information to coordinate (synchronize) their functions (column 6, lines 36-52).

Chapius1 does not explicitly disclose the plurality of digital power management devices are operable to communicate with each other over the control and communication bus.

Chapius2 teaches a distributed power system of point-of-load regulators (Fig. 3) that comprises a plurality of digital power management devices (column 4, lines 35-57).

Furthermore, Chapius2 teaches the plurality of digital power management devices are operable to communicate with each other over the control and communication bus (column 7, lines 21-29). Chapius2 further teaches the additional benefit of having lower complexity and smaller size to the overall power system (column 1, lines 47-64).

It would have been obvious to one of ordinary skill of the art having the teachings of Chapius1 and Chapius2 at the time the invention was made, to modify power delivery management system of Chapius1 to include the plurality of digital power management devices are operable to communicate with each other over the control and communication bus as taught by Chapius2. One of ordinary skill in the art would be motivated to make this combination of having the plurality of digital power management devices operable to communicate with each other over the control and communication bus in view of the teachings of Chapius2, as doing so

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would give the added benefit of having lower complexity and smaller size to the overall power system (as taught by Chapius2 above).

As to claim 2, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein at least one of the plurality of digital power management devices is also operable to coordinate and/or control the functions of one or more other ones of the plurality of digital power management devices (Chapius1 discloses the individual converters transferring a single bit to the other converters to synchronize the clocking; column 6, lines 36-52).

As to claim 3, it is directed to the system of steps set forth in claims 1 and 2. Therefore, it is rejected for the same basis as set forth hereinabove.

As to claim 4, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein the plurality of functions comprise one or more power delivery functions (as shown in the list of functions; column 4, lines 53-64); wherein each respective one of the plurality of digital power management devices includes a controller (310) operable to control the one or more power delivery functions of the respective digital power management device (column 5, lines 13-46).

As to claim 5, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein at least a subset of the plurality of digital power management devices each comprise the same functions (column 4, line 51 thru column 5, line 12).

As to claim 6, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein

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one or more of the plurality of digital power management devices comprises a voltage converter unit (column 4, lines 17-30).

As to claim 7, it is directed to the system of steps set forth in claims 1 and 6. Therefore, it is rejected for the same basis as set forth hereinabove.

5           As to claim 8, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein the control and communication bus is a digital bus (column 6, lines 36-52).

As to claims 9-12, they are directed to the system of steps set forth in claim 1 and 8. Therefore, it is rejected for the same basis as set forth hereinabove.

10           As to claim 13, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein each individual one of the plurality of digital power management devices is operable to be programmed and/or configured across the control and communication bus (column 4, line 51 thru column 5, line 12).

15           As to claim 14, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein two or more of the plurality of digital power management devices are operable to be grouped together in a current sharing configuration (column 5, lines 13-46).

As to claims 15-19, they are directed to the system of steps set forth in claims 1 and 14.

20           Therefore, it is rejected for the same basis as set forth hereinabove.

As to claim 20, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein

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each one of the plurality of digital power management devices is operable to provide feedback data to all other ones of the plurality of digital power management devices (column 5, lines 13-63).

As to claim 21, it is directed to the system of steps set forth in claim 1 and 20. Therefore,  
5 it is rejected for the same basis as set forth hereinabove.

As to claim 22, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein the functions of the plurality of digital power management devices comprise at least one of: supply sequencing; phase offset adjustment; current sharing; voltage programming and voltage  
10 tracking; and ramp rate control (column 5, line 13 thru column 6, line 20).

As to claims 23 and 24, they are directed to the system of steps set forth in claims 1 and 22. Therefore, it is rejected for the same basis as set forth hereinabove.

As to claim 25, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein  
15 the functional features of the plurality of digital power management devices include margining (column 5, line 13 thru column 6, line 20).

As to claim 26, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein the functional features of the plurality of digital power management devices include voltage  
20 supply sequencing (column 5, line 13 thru column 6, line 20).

As to claim 27, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system further



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comprising at least one master control device (210) coupled to the control and communication bus, wherein the at least one master control device is operable to centrally control the plurality of digital power management devices to implement advanced features (column 4, line 17 thru column 5, line 12).

5           As to claims 28, 29 and 35-39, they are directed to the system of steps set forth in claims 1 and 27. Therefore, it is rejected for the same basis as set forth hereinabove.

          As to claim 30, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein each one of the plurality of digital power management devices is operable to automatically self-  
10   test (column 4, line 17 thru column 5, line 12).

          As to claim 31, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein each one of the plurality of digital power management devices is operable to auto-calibrate (column 7, line 55 thru column 8, line 17).

15           As to claim 32, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein the power delivery management system is comprised on a printed circuit board; wherein each of the plurality of digital power management devices is distributed on the printed circuit board (column 4, lines 31-50).

20           As to claim 33, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein

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each of the plurality of digital power management devices comprises an integrated circuit (column 4, lines 31-50).

As to claim 34, Chapius1 in combination with Chapius2 taught the power delivery management system in claim 1, as shown above. Chapius2 further teaches the system wherein  
5 the control and communication bus is a serial bus (column 6, lines 36-52).

### *Response to Arguments*

Applicant's arguments with respect to claims 1-39 have been considered but are moot in view of the new ground(s) of rejection.

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### *Conclusion*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The Examiner can normally be reached on 8AM - 4PM.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

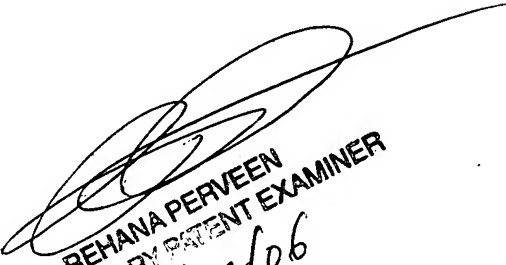
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system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.

5 James F. Sugent  
Patent Examiner, Art Unit 2116  
February 9, 2007

  
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2/17/06